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## REMARKS

The Office's detailed attention to the instant application is greatly appreciated. Pending claims 27, 28, 30-32, 34-37, 41-48 and 50-52 are directed to provisionally elected species of Figures 3-6 and sub-species of Figure 10A (Response to Office Action dated 05/21/02). As presented above, the instant Amendment includes amendments to claims 27, 47 and 52. Applicant requests entry of this Amendment and allowance of the pending claims.

This Remarks section is organized as follows: (i) Amendments to Specification; (ii) Claim Rejections – 35 USC §112; (iii) Claim Rejections – 35 USC §102: Nishishita; (iv) Claim Rejections – 35 USC §102: Bridgnell; (v) Claim Rejections – 35 USC §103; and (vi) Conclusion.

### Amendments to Specification

The amendments to the specification include correction of inadvertent typographical errors at page 17, line 14 (“and” to “an”) and at page 19, line 4 (insertion of “to”). An amendment to the paragraph at page 19, lines 10-17 inserts the following clarifying language “in the case that the inlet tube's motion limiter 192 is in contact with the inlet retainer 196”. Applicant submits that this amendment does not add new matter and simply clarifies discussion of a particular embodiment. Applicant respectfully requests entry of these amendments to the specification without prejudice.

1 **Claim Rejections – 35 USC §112**

2 **Claim 28**

3 The Office rejected claim 28 under §112, ¶2, as being indefinite for failing  
4 to particularly point out and distinctly claim the subject matter which applicant  
5 regards as the invention. More specifically, the Office refers to Fig. 5 and states  
6 that the disclosure does not support the subject matter of claim 28.

7 Claim 28, which depends on independent claim 27, recites: “*the first mount*  
8 *is adjustable to allow the tube to expand separately from the load bearing*  
9 *member.*” In response to this rejection, Applicant directs the Office to an  
10 exemplary mount that includes item 196 of Fig. 5 – “the retainer”. At page 19,  
11 lines 15-17, the instant specification states: “The size structure of the retainer 196  
12 can vary and will be dependent upon the specific requirements of the use.” With  
13 respect to the exemplary mount of Fig. 5, Applicant asserts that one of ordinary  
14 skill in the art would understand that “vary” implies “adjustable”. Further, one of  
15 ordinary skill in the art would understand that the inlet retainer fastener (e.g., item  
16 198) may allow for adjustability (NB: page 19, lines 20-21: “other configurations  
17 of the fastener 198 are available”). Therefore, Applicant respectfully submits that  
18 the subject matter of claim 28 is supported by the specification and hence the  
19 rejection traversed.

20  
21 **Claim 52**

22 The Office rejected claim 52 as being indefinite, in particular, that “the  
23 second mount” lacked antecedent basis. Applicant has amended claim 52 by  
24 deleting the word “second” to correct this inadvertent, typographical error. Claim  
25 52 now recites, in relevant part, “a mount positioned between the end of the tube

1 and the core, wherein the mount is capable of transferring loads between the tube  
2 and the core”. Applicant submits that this amendment traverses the §112 rejection  
3 of claim 52.

4  
5 **Claim Rejections – 35 USC §102: Nishishita**

6 In the Office Action dated September 11, 2002, the Office rejected claims  
7 27, 28, 30, 31, 34-37, 41, 42, 43, 45-47 and 50-52 under 35 U.S.C. §102(b) as  
8 being anticipated by Nishishita (U.S. Pat. No. 5,551,506, referred to as the ‘506  
9 reference). The Office also stated that “the recitation of an element is ‘capable of’  
10 performing a function is not a positive limitation but only requires the ability to so  
11 perform. It does not constitute a limitation in any patentable sense. In re  
12 Hutchison, 69 USPQ 138.” Before addressing the ‘506 reference, Applicant  
13 responds to the Office’s position on the phrase “capable of being”, as it appears in  
14 independent claims 27, 47 and 52.

15 MPEP §2173.05(g), entitled “functional language”, states that “functional  
16 language does not, in and of itself, render a claim improper” (citing In re  
17 Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971)). Indeed, an example  
18 given in §2173.05(g) uses the language “capable of being” and notes that such  
19 language served to define structural attributes of interrelated parts (citing In re  
20 Venezia, 530 F.2d 956, 189 USPQ 149 (CCPA 1976)). Hence, Applicant submits  
21 that the functional language of independent claims 27, 47 and 52 constitutes  
22 proper claim language which may serve to distinguish the claimed subject matter  
23 over that of any cited art. In addition, as described below, Applicant has amended  
24 claims 27, 47 and 52, which now recite in relevant part: “capable of being in  
25 contact with the core (or ‘heat exchange members’ per claim 47) to transfer loads

1 between the tube and the core (or 'heat exchange members' per claim 47)".  
2 Applicant respectfully submits that MPEP §2173.05(g) and/or the amendment  
3 resolve any ambiguity regarding this issue.  
4

### 5 **Independent Claim 27**

6 Independent claim 27, as amended, recites:

7 *A heat exchanger comprising:*

- 8 a. *a core having a heat exchange portion;*
- 9 b. *a tube, wherein at least a portion of the tube extends into the*  
10 *core and is capable of being in contact with the core to transfer loads*  
11 *between the tube and the core, to provide support to the core and to*  
12 *increase the stiffness of the core, and wherein the tube is positioned at least*  
13 *adjacent to the heat exchange portion of the core;*
- 14 c. *a load bearing member positioned adjacent the core; and*
- 15 d. *a first mount positioned between the tube and the load*  
16 *bearing member, so that the load bearing member can receive loads from*  
17 *the tube.*

18 Applicant asserts that the '506 reference does not disclose, teach or suggest  
19 each and every element as set forth in claim 27, either expressly or inherently, nor  
20 does it disclose, teach or suggest an arrangement of the elements as required by  
21 the claim 27. In particular, the '506 reference does not disclose, teach or suggest a  
22 tube capable of being in contact with a core to transfer loads between the tube and  
23 the core, to provide support to the core, to increase the stiffness of the core and to  
24 transfer loads to a load bearing member positioned adjacent to the core. Indeed,  
25 the '506 reference does not disclose, teach or suggest a load bearing member.

1 While the Office refers to item 6a, which is shown in Figs. 1, 2, 7A, 7B, 9, 10, 11  
2 of the '506 reference, at no time is item 6a associated with "load bearing".  
3 Further, the communicating pipe 30 is never described as having an ability to  
4 transfer loads to item 6a; probably because item 6a is not capable of bearing any  
5 substantial loads. Thus, for at least the foregoing reasons, Applicant traverses the  
6 Office's rejection of independent claim 27 under §102(b) as being anticipated by  
7 the '506 reference.

8  
9 **Dependent Claims 28, 30, 31, 34-37, 41, 42, 43, 45 and 46**

10 Dependent claims 28, 30, 31, 34-37, 41, 42, 43, 45 and 46 depend on  
11 independent claim 27. For at least the foregoing reasons, Applicant submits that  
12 independent claim 27 is patentable over the '506 reference. As such, Applicant  
13 submits that the corresponding dependent claims are also patentable over the '506  
14 reference.

15  
16 **Claim 47**

17 Independent claim 47, as amended, recites:

18 *A heat exchanger comprising:*

- 19 *a. a core having a heat exchange portion, wherein the*  
20 *heat exchange portion comprises a layering of heat exchange members,*  
21 *and wherein the heat exchange members are capable of being displaced*  
22 *substantially laterally;*  
23 *b. a tube having a length, wherein at least a portion of*  
24 *the tube extends adjacent to the heat exchange members and is capable of*  
25 *being in contact with the heat exchange members to transfer loads between*

1        *the tube and the heat exchange members, to provide support to the core and*  
2        *to increase the stiffness of the core;*

3                *c.        a load bearing member positioned adjacent the core;*

4        *and*

5                *d.        a first mount positioned between the tube and the load*  
6        *bearing member, so that the load bearing member can receive loads from*  
7        *the tube.*

8        Applicant asserts that the '506 reference does not disclose, teach or suggest  
9        each and every element as set forth in claim 47, either expressly or inherently, nor  
10       does it disclose, teach or suggest an arrangement of the elements as required by  
11       the claim 47. In particular, the '506 reference does not disclose, teach or suggest a  
12       tube capable of being in contact with a heat exchange members to transfer loads  
13       between the tube and the heat exchange members, to provide support to the core,  
14       to increase the stiffness of the core and to transfer loads to a load bearing member  
15       positioned adjacent to the core. Indeed, the '506 reference does not disclose, teach  
16       or suggest a load bearing member. While the Office refers to item 6a, which is  
17       shown in Figs. 1, 2, 7A, 7B, 9, 10, 11 of the '506 reference, at no time is item 6a  
18       associated with "load bearing". Further, the communicating pipe 30 is never  
19       described as having an ability to transfer loads to item 6a; probably because item  
20       6a is not capable of bearing any substantial loads. Thus, for at least the foregoing  
21       reasons, Applicant traverses the Office's rejection of independent claim 47 under  
22       §102(b) as being anticipated by the '506 reference.

1 **Dependent Claims 50 and 51**

2       Dependent claims 50 and 51 depend on independent claim 47. For at least  
3 the foregoing reasons, Applicant submits that independent claim 47 is patentable  
4 over the '506 reference. As such, Applicant submits that the corresponding  
5 dependent claims are also patentable over the '506 reference. In addition, claim  
6 51 recites a second mount that is a sliding mount capable of receiving substantially  
7 lateral loads from the tube while allowing the tube to expand along its length. The  
8 '506 reference does not disclose, teach or suggest such a second mount. In  
9 contrast, the '506 reference discloses techniques in Figs. 13-14 to ensure that the  
10 communicating pipe 30 cannot move along its length with respect to the tank 2'.  
11 Hence, with respect to claim 51, one of ordinary skill in the art would gain nothing  
12 by looking to the '506 reference.

13  
14 **Claim 52**

15 Independent claim 52, as amended, recites:

16       *A heat exchanger comprising:*

- 17               a.     *a core having a heat exchange portion;*  
18               b.     *a tube having a length and an end, wherein at least a*  
19               *portion of the tube extends into the core so that the end of the tube is*  
20               *positioned within the core, wherein the tube is capable of being in contact*  
21               *with the core to transfer loads between the tube and the core, to provide*  
22               *support to the core and to increase the stiffness of the core, and wherein the*  
23               *tube is positioned at least adjacent to the heat exchange portion of the*  
24               *core;*  
25

- 1                   c.     *a load bearing member positioned adjacent the core;*  
2     *and*  
3                   d.     *a mount positioned between the end of the tube and the*  
4     *core, wherein the mount is capable of transferring loads between the tube*  
5     *and the core.*

6       Applicant asserts that the '506 reference does not disclose, teach or suggest  
7 each and every element as set forth in claim 52, either expressly or inherently, nor  
8 does it disclose, teach or suggest an arrangement of the elements as required by  
9 the claim 52. In particular, the '506 reference does not disclose, teach or suggest a  
10 heat exchanger having a core and a tube that is capable of being in contact with the  
11 core to transfer loads between the tube and the core, to provide support to the core  
12 and to increase the stiffness of the core. Indeed, the '506 reference does not  
13 disclose, teach or suggest supporting or stiffening a heat exchanger core. Instead,  
14 the '506 reference discloses techniques to smooth flow of coolant through a heat  
15 exchanger subject to brazing in a furnace. Thus, for at least the foregoing reasons,  
16 Applicant traverses the Office's rejection of independent claim 52 under §102(b)  
17 as being anticipated by the '506 reference.

18  
19     **Claim Rejections – 35 USC §102: Bridgnell**

20       In the Office Action dated September 11, 2002, the Office rejected claims  
21 27, 28, 30, 32, 34, 41-43, and 45-48 under 35 U.S.C. §102(b) as being anticipated  
22 by Bridgnell (U.S. Pat. No. 4,291,752, referred to as the '752 reference). The  
23 Office also stated that "the recitation of an element is 'capable of' performing a  
24 function is not a positive limitation but only requires the ability to so perform. It  
25 does not constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ



1 138.” Before addressing the reference, Applicant responds to the Office’s position  
2 on the phrase “capable of being”, as it appears in independent claims 27 and 47.

3 MPEP §2173.05(g), entitled “functional language”, states that “functional  
4 language does not, in and of itself, render a claim improper” (citing In re  
5 Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971)). Indeed, an example  
6 given in §2173.05(g) uses the language “capable of being” and notes that such  
7 language served to define structural attributes of interrelated parts (citing In re  
8 Venezia, 530 F.2d 956, 189 USPQ 149 (CCPA 1976)). Hence, Applicant submits  
9 that the functional language of independent claims 27 and 52 constitutes proper  
10 claim language which may serve to distinguish the claimed subject matter over  
11 that of any cited art. In addition, as described below, Applicant has amended  
12 claims 27 and 47, which now recite in relevant part: “capable of being in contact  
13 with the core (or heat exchange members) to transfer loads between the tube and  
14 the core (or heat exchange members)”. Applicant respectfully submits that MPEP  
15 §2173.05(g) and/or the amendment resolve any ambiguity regarding this issue.

16  
17 **Independent Claim 27**

18 Independent claim 27, as amended, recites:

19 *A heat exchanger comprising:*

- 20           a.     *a core having a heat exchange portion;*  
21           b.     *a tube, wherein at least a portion of the tube extends into the*  
22 *core and is capable of being in contact with the core to transfer loads*  
23 *between the tube and the core, to provide support to the core and to*  
24 *increase the stiffness of the core, and wherein the tube is positioned at least*  
25 *adjacent to the heat exchange portion of the core;*

- 1                   c.     *a load bearing member positioned adjacent the core; and*  
2                   d.     *a first mount positioned between the tube and the load*  
3                   *bearing member, so that the load bearing member can receive loads from*  
4                   *the tube.*

5           Applicant asserts that the '752 reference does not disclose, teach or suggest  
6 each and every element as set forth in claim 27, either expressly or inherently, nor  
7 does it disclose, teach or suggest an arrangement of the elements as required by  
8 the claim 27. In particular, the '752 reference does not disclose, teach or suggest a  
9 tube capable of being in contact with a core to transfer loads between the tube and  
10 the core, to provide support to the core, to increase the stiffness of the core and to  
11 transfer loads to a load bearing member positioned adjacent to the core. Indeed,  
12 the '752 reference does not disclose, teach or suggest transfer of loads from a tube  
13 to a load bearing member. While the Office refers to various items, including item  
14 24 – “duct” and item 28 – “core end plate”, which are shown in Figs. 2, 3 and 4 of  
15 the '752 reference, the core end plate 28 is an integral part of a core, and not a  
16 separate component positioned adjacent to a core. As stated in col. 4, lines 62-65  
17 of the '752 reference:

18           A single section 10 expands in all three dimensions as it is heated. These  
19 changes of direction of the core must be accommodated with respect to the  
20 frame 26, which is a rigid structure.

21           While the rigid structure, frame 26, may appear to be somewhat analogous  
22 to a load bearing member of the instant application, frame 26 is not designed to  
23 receive loads from the ducts 24a and 24b because bellows sections 25 separate the  
24 ducts 24a and 24b from the frame 26. The bellows sections 25 accommodate  
25 relative thermal growth of the core with respect to the outer casing and control the

1 duct loads applied to the core, which allows a rigid coupling to be effected at the  
2 duct flanges 22 ('752 reference at col. 5, lines 36-40). Therefore, the bellows  
3 sections 25 essentially decouple the transfer of loads from the ducts 24a, 24b to  
4 the frame 26. Thus, for at least the foregoing reasons, Applicant traverses the  
5 Office's rejection of independent claim 27 under §102(b) as being anticipated by  
6 the '752 reference.

7  
8 **Dependent Claims 28, 30, 32, 34, 41-43, 45 and 46**

9 Dependent claims 28, 30, 32, 34, 41-43, 45 and 46 depend on independent  
10 claim 27. For at least the foregoing reasons, Applicant submits that independent  
11 claim 27 is patentable over the '752 reference. As such, Applicant submits that  
12 the corresponding dependent claims are also patentable over the '752 reference.

13  
14 **Claim 47**

15 Independent claim 47, as amended, recites:

16 *A heat exchanger comprising:*

- 17 *a. a core having a heat exchange portion, wherein the*  
18 *heat exchange portion comprises a layering of heat exchange members,*  
19 *and wherein the heat exchange members are capable of being displaced*  
20 *substantially laterally;*  
21 *b. a tube having a length, wherein at least a portion of*  
22 *the tube extends adjacent to the heat exchange members and is capable of*  
23 *being in contact with the heat exchange members to transfer loads between*  
24 *the tube and the heat exchange members, to provide support to the core and*  
25 *to increase the stiffness of the core;*

1 c. a load bearing member positioned adjacent the core;

2 and

3 d. a first mount positioned between the tube and the load  
4 bearing member, so that the load bearing member can receive loads from  
5 the tube.

6 Applicant asserts that the '752 reference does not disclose, teach or suggest  
7 each and every element as set forth in claim 47, either expressly or inherently, nor  
8 does it disclose, teach or suggest an arrangement of the elements as required by  
9 the claim 47. In particular, the '752 reference does not disclose, teach or suggest a  
10 tube capable of being in contact with heat exchange members to transfer loads  
11 between the tube and the heat exchange members, to provide support to the core,  
12 to increase the stiffness of the core and to transfer loads to a load bearing member  
13 positioned adjacent to the core. Indeed, the '752 reference does not disclose, teach  
14 or suggest transfer of loads from a tube to a load bearing member. While the  
15 Office refers to various items, including item 24 – “duct” and item 28 – “core end  
16 plate”, which are shown in Figs. 2, 3 and 4 of the '752 reference, the core end  
17 plate 28 is an integral part of a core, and not a separate component positioned  
18 adjacent to a core. As stated in the '752 reference:

19 A single section 10 expands in all three dimensions as it is heated. These  
20 changes of direction of the core must be accommodated with respect to the  
21 frame 26, which is a rigid structure.

22 '752 reference, col. 4, lines 62-65.

23 While the rigid structure, frame 26, may appear to be somewhat analogous  
24 to a load bearing member of the instant application, frame 26 is not designed to  
25 receive loads from the ducts 24a and 24b because bellows sections 25 separate the

1 ducts 24a and 24b from the frame 26. The bellows sections 25 accommodate  
2 relative thermal growth of the core with respect to the outer casing and control the  
3 duct loads applied to the core, which allows a rigid coupling to be effected at the  
4 duct flanges 22 ('752 reference at col. 5, lines 36-40). Thus, the bellows sections  
5 25 essentially decouple the transfer of loads from the ducts 24a, 24b to the frame  
6 26. Thus, for at least the foregoing reasons, Applicant traverses the Office's  
7 rejection of independent claim 47 under §102(b) as being anticipated by the '752  
8 reference.

#### 9 10 **Dependent Claim 48**

11 Dependent claim 48 depends on independent claim 47. For at least the  
12 foregoing reasons, Applicant submits that independent claim 47 is patentable over  
13 the '752 reference. As such, Applicant submits that the corresponding dependent  
14 claim are also patentable over the '752 reference.

#### 15 16 **Claim Rejections – 35 USC §103 (Claim 44)**

17 In the Office Action dated September 11, 2002, the Office rejected claim 44  
18 under 35 U.S.C. §103 as being unpatentable over Nishishita (US 5,551,506,  
19 referred to as the '506 reference) in view of Ryoichi Hoshino (JP 406159969 A,  
20 referred to as the '969 reference) and as being unpatentable over Brigdnell (U.S.  
21 Pat. No. 4,291,752, referred to as the '752 reference) in view of the '969 reference.

22 Claim 44 depends on claim 27, 41, 42 and 43. Claims 41-44 recite:

23 *... a heat exchange portion comprises a layering of heat exchange*  
24 *members (claim 41) ... wherein the tube is positioned at least adjacent the*  
25 *heat exchange members, so to limit movement of the heat exchange*

1 *members and to receive loads from the heat exchange members, so to*  
2 *increase the stiffness of the core (claim 42) . . . wherein the tube is*  
3 *positioned through at least one of the heat exchange members (claim 43) . .*  
4 *. and wherein the tube defines a passage therewithin, and wherein the tube*  
5 *is permeable so that the passage is in communication with the heat*  
6 *exchange portion of the core (claim 44).*

7 The Office's two §103 rejections rely primarily on the '506 and the '752  
8 references, which were used to form the Office's two §102(b) rejections.  
9 Applicant's response to the §102(b) rejections discusses various reasons as to why  
10 the '506 and '752 references do not anticipate the subject matter of claim 27.  
11 Because claim 44 depends on independent claim 27, Applicant relies on the  
12 foregoing discussion to traverse the §103 rejections. In particular, the '969  
13 reference does not disclose, teach or suggest the subject matter of claim 27, alone  
14 or in combination with the '506 reference or the '752 reference. For example, the  
15 '969 reference does disclose, teach or suggest, alone or in combination with the  
16 '506 reference or the '752 reference, a load bearing member that can receive loads  
17 from a permeable tube wherein the tube can transfer loads between the tube and a  
18 core. Therefore, Applicant submits that claim 44 is patentable over the '506  
19 reference and the '752 reference in view of the '969 reference.

## 20 21 **Conclusion**

22 Pending claims 27, 28, 30-32, 34-37, 41-48 and 50-52 are in condition for  
23 allowance. Applicant respectfully requests reconsideration and prompt issuance of  
24 the subject application. If any issues remain that prevent issuance of this  
25

1 application, the Office is urged to contact the undersigned attorney before issuing  
2 a subsequent Action.

3  
4 Respectfully Submitted,

5  
6 Dated: 12/11/02

By: 

7 Brian J. Pangrle

8 Reg. No. 42,973

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1 **Version of amended paragraphs with markings to show changes made**

2 Paragraph at page 17, lines 14-19:

3 As shown in Figures 5 and 6, an[d] inlet mount 190 and an outlet  
4 mount 200 are used to take up axial and blow off loads to core. The inlet  
5 and outlet mounts 190 and 200 attach the inlet and outlet manifold tubes  
6 170 and 180 (respectively) to the strongback 143. As can be seen in Figure  
7 5, the inlet mount 190 includes an inlet motion limiter 192, an inlet limiter  
8 channel 194, an inlet retainer 196 and an inlet retainer fastener 198.

9  
10 Paragraph at page 18, line 28 – page 19, line 9:

11 The inlet limiter channel 194 is set into the strongback 143 and  
12 receives the inlet motion limiter 192. The limiter channel 194 functions to  
13 retain the motion limiter 192 while providing sufficient space for the  
14 differential thermal expansion, as noted above. The depth of the channel  
15 194 preferably is sufficiently close to the thickness of the limiter 192 to  
16 retain the vertical movement of the inlet tube 170, but with enough  
17 clearance to allow substantially unrestricted horizontal movement of the  
18 inlet tube 170 due to thermal expansion. Such horizontal movement can be  
19 received by the expansion space 195. Alternative configurations of the  
20 limiter channel 194 are possible. For example, the limiter channel 194 can  
21 instead be on the surface of the strongback 143 and be defined by the inlet  
22 retainer 196 positioned about it.



1 Paragraph at page 19, lines 10-17:

2 As shown in Figure 5, the inlet retainer 196 is positioned over both  
3 the limiter channel 194 and the motion limiter 192. The retainer 196  
4 functions to keep the motion limiter 192 in the limiter channel 194 and, in  
5 so doing, prohibits vertical movement of the inlet tube 170 in the case that  
6 the inlet tube's motion limiter 192 is in contact with the inlet retainer 196.  
7 In the embodiment shown, the retainer 196 is ring shaped, however, other  
8 configurations are possible. In one such configuration the retainer 196 is a  
9 set of tabs extending out over the motion limiter 192. The size and  
10 structure of the retainer 196 can vary and will be dependent upon the  
11 specific requirements of the use.  
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**Version of amended claims with markings to show changes made**

27. (Amended) A heat exchanger comprising:

- a. a core having a heat exchange portion;
- b. a tube, wherein at least a portion of the tube extends into the core and is capable of being in contact with the core to transfer loads between the tube and the core, to provide support to the core and to increase the stiffness of the core, and wherein the tube is positioned at least adjacent to the heat exchange portion of the core;
- c. a load bearing member positioned adjacent the core; and
- d. a first mount positioned between the tube and the load bearing member, so that the load bearing member can receive loads from the tube.

47. (Amended) A heat exchanger comprising:

- a. a core having a heat exchange portion, wherein the heat exchange portion comprises a layering of heat exchange members, and wherein the heat exchange members are capable of being displaced substantially laterally;
- b. a tube having a length, wherein at least a portion of the tube extends adjacent to the heat exchange members and is capable of being in contact with the heat exchange members to transfer loads between the tube and the heat exchange members, to provide support to the core and to increase the stiffness of the core;
- c. a load bearing member positioned adjacent the core; and
- d. a first mount positioned between the tube and the load bearing member, so that the load bearing member can receive loads from the tube.

1 52. (Amended) A heat exchanger comprising:

2 a. a core having a heat exchange portion;

3 b. a tube having a length and an end, wherein at least a portion  
4 of the tube extends into the core so that the end of the tube is positioned within the  
5 core, wherein the tube is capable of being in contact with the core to transfer loads  
6 between the tube and the core, to provide support to the core and to increase the  
7 stiffness of the core, and wherein the tube is positioned at least adjacent to the heat  
8 exchange portion of the core;

9 c. a load bearing member positioned adjacent the core; and

10 d. a mount positioned between the end of the tube and the core,  
11 wherein the [second] mount is capable of transferring loads between the tube and  
12 the core.